A buttress 65 extends a partial distance around the rim 52 of cup body 51 as shown in FIGS. 13 and 15–19. The buttress 65 can be used to contain bone cement in a mass to aid in holding the polyethylene {"all poly") liner 11 in position. An arcuate slot 59 extends through the cup body 51. Further, a plurality of openings 60, 62 extend through the cup 51 wall at spaced apart locations.

Openings 60 are reinforced openings, being surrounded by a thickened portion of the cup body wall in the form of an annular boss 61. The annular boss 61 preferably extends from the convex or outer surface of cup body 51 as shown in FIG. 14. The screw holes 62 and the arcuate slot 59 are unreinforced openings that are designed to allow cement to flow freely from one side of the cup body to the other during the surgical procedure.

The following table lists the parts numbers and parts descriptions as used herein and in the drawings attached hereto.

PARTS LIST

Part Number	Description
10	pelvic girdle
10	acetabular prosthesis
10A	cup body
11	plastic liner
12A	convex surface
12B	concave surface
13	annular rim
13A	rim plane
14	flange
15	reverse curve surface
16	end portion of flange
17	end portion of flange
18	outer edge
19	outer edge
20	lower surface of flange
21	periphery of flange
22	buttress
23	curved outer surface
24	curved inside surface
25	flat plane
26	arcuate slot
27	opening
28	annular boss
29	opening
30	opening
50	acetabular prosthesis
51	cup body
51A	concave surface
51B	convex surface
52	annular rim
53	superior flange
54	posterior flange
55	inferior flange
56	openings
57	openings
58	openings
59	arcuate slot
60	opening
61	annular boss
62	opening
63	angle
64	axis
65	wall
66	end of wall
67	end of wall
68	top of wall

Because many varying and different embodiments may be made within the scope of the inventive concept herein taught, and because many modifications may be made in the embodiments herein detailed in accordance with the descriptive requirement of the law, it is to be understood that the details herein are to be interpreted as illustrative and not in a limiting sense.

What is claimed as invention is:

1. An acetabular prosthesis for cement implantation comprising;

a) prosthesis full or partial cup body having a cup body wall with a cup body wall thickness, the body having a concave surface on a distal side of the cup body, a convex surface on a promimal side of the cup body and an annular rim;

b) a liner that registers with the cup body, the liner having a liner wall with a liner wall thickness much greater than the cup body wall thickness and a concave surface and a convex surface that registers within the concave surface of the cup body;

c) the cup body wall having a plurality of openings therethrough;

d) some of the openings being bone screw receptive openings that are reinforced with an annular reinforcement positioned on the distal side of the cup body;

e) a cement mantle for affixing the plastic liner to the cup body;

f) the cup body having a peripheral buttress portion for supporting a portion next to the annular rim and extending distally downwardly from the concave surface, of cement of the cement mantle at a peripheral interface position in between the liner and body;

g) wherein the cement mantle flows through at least some of the openings upon assembly of the cup liner to the cup body.

2. The prosthesis of claim 1 further comprising at least one flange that extends away from the rim of the cup body, for attaching the cup body to the patient's pelvis.

3. The prosthesis of claim 1 wherein the cup body is about 2 mm in thickness.

4. The cemented acetabular prosthesis of claim 1 wherein the cup body is hemispherically shaped.

5. The cemented acetabular prosthesis of claim 1 wherein the cup body is a partial hemispherical shape.

6. The cemented acetabular prosthesis of claim 1 wherein the liner has a plastic surface.

7. The cemented acetabular prosthesis of claim 1 wherein the liner is plastic.

8. The prosthesis of claim 1 further comprising an arcuate slot that extends through the cup body wall along and near the periphery of the cup body.

9. The prosthesis of claim 1 wherein the buttress extends a partial distance about the periphery of the cup body for supporting cement at the interface of the cup body and the liner.

10. The prosthesis of claim 1 wherein the buttress extends at least 45 degrees about the periphery of the rim of the cup body.

11. The prosthesis of claim 1 wherein the buttress at least 90 degrees about the periphery of the rim of the cup body.

12. The prosthesis of claim 1 further comprising an annular reinforcement that surrounds each opening.

13. An acetabular prosthesis for cement implantation comprising;

a) a thin prosthesis cup body having a wall with a thickness of between 1 and 3 mm, the body having a

distal concave surface area, a central portion, a proximal convex surface, and an annular rim defining a cup periphery;

b) the cup body having at least a pair of flanges that extend away from the cup central portion;

c) a plastic liner that can be cemented to the concave surface area of the cup body, the liner having a wall with a thickness much greater than the thickness of the cup body and a concave surface and a convex surface that registers with the concave surface area of the cup body;

d) the cup body wall having a plurality of openings therethrough;

e) some of the openings being bone screw receptive openings that are reinforced with an annular reinforcement that extends away from the convex surface of the cup body;

f) a cement mantle for affixing the plastic liner to the cup body;

g) the cup body having a peripheral buttress extending downwardly from the distal side of the cup body for supporting a portion of cement of the cement mantle at a peripheral interface position in between the liner and body; and

h) wherein the cement mantle flows through at least some of the openings upon assembly of the cup liner to the cup body.

14. A acetabular cup prosthesis comprising:

a) a cup member having an inner, distal concave surface and an outer, proximal convex surface;

b) the cup member having an apex and a rim that extends about the periphery of the cup member, the rim having a portion that defines a rim plane;

c) a curved flange portion that extends a partial distance around the cup member and away from the convex surface of the cup member, the flange portion having lower surface and an edge that falls in a flange plane that forms an angle with the rim plane; and

d) a buttress mounted on the distal concave surface of the cup body and at the lower surface of the flange portion and that extends distally downwardly from the flange portion, the buttress being curved to generally follow the curved flange member.

15. The acetabular cup prosthesis of claim 14 wherein the flange member and buttress each extend around the cup member a measure of between about 45 and 135 degrees.

16. The acetabular cup prosthesis of claim 14 wherein the flange member and buttress each extend around the cup member a measure of at least ninety degrees.

17. The acetabular cup prosthesis of claim 14 wherein the flange member forms a reverse curved portion with the convex outer surface of the cup member.

18. The acetabular cup prosthesis of claim 14 wherein the flange plane and the rim plane form an angle of between about 90 and 180 degrees.

19. The acetabular cup prosthesis of claim 14 further comprising at least one opening through the cup member.

20. The acetabular cup prosthesis of claim 14 further comprising a plurality of openings extending through the cup member.

21. The acetabular cup prosthesis of claim 14 further comprising at least one opening through the cup member and a bone screw for fastening the cup member to a patient's bone tissue at the opening.

22. The acetabular cup prosthesis of claim 14 further comprising a plurality of openings extending through the cup member, a bone screw for fastening the cup member to a patient's bone tissue at one of openings, and some of the openings being receptive of bone cement and for conveying bone cement between the inner concave and outer convex surfaces of the cup member.

23. A acetabular cup prosthesis comprising:

a) a thin cup member having a distal side with an inner concave surface, a proximal side with an outer convex surface, and a cup wall;

b) the cup member having an apex and a rim that extends about the periphery of the cup member, the rim having a portion that defines a rim plane;

c) a curved flange portion that extends a partial distance around the cup member and away from the convex surface of the cup member, the flange portion having lower surface and an edge that falls in a flange plane that forms an obtuse angle with the rim plane; and

d) a buttress mounted on the distal side at the lower surface of the flange portion and that extends distally downwardly from the flange portion, the buttress being curved.

24. The acetabular cup prosthesis of claim 23 wherein the cup wall has a thickness of about 2 mm.

25. The acetabular cup prosthesis of claim 23 further comprising a bone screw and wherein the cup wall has an opening that receives the bone screw.

26. The acetabular cup prosthesis of claim 25 further comprising an annular boss that surrounds the bone screw opening.

27. The acetabular cup prosthesis of claim 23 further comprising an annular boss that surrounds the bone screw opening on the convex surface of the cup member.

28. The acetabular cup prosthesis of claim 24 further comprising a plurality of openings including at least some openings that are reinforced with thickened annular portions of the wall next to the openings, a bone screw, and wherein the bone screw fits the opening.

29. The acetabular cup prosthesis of claim 24 further comprising a plurality of openings extending through the cup member, at least some of the openings being surrounded by thickened portions of the cup member.

30. The acetabular cup prosthesis of claim 29 wherein the thickened portions are on the convex surface of the cup member.

31. The acetabular cup prosthesis of claim 24 further comprising a slot that extends through the cup member and about the cup member a distance.

32. The acetabular cup prosthesis of claim 24 wherein the flange member extends around the cup member a measure of between about 45 and 135 degrees.

33. The acetabular cup prosthesis of claim 24 wherein the flange member forms a reverse curved portion with the convex outer surface of the cup member.

34. The acetabular cup prosthesis of claim 24 further comprising a plurality of openings extending through the cup member at the flange portion.

35. A acetabular cup prosthesis comprising:

a) a cup member having a distal side with an inner concave surface and a proximal side with an outer convex surface;

b) the cup member having an apex and a rim that extends about the periphery of the cup member, the rim having a portion that defines a rim plane;

c) a plurality of circumferentially spaced, radially extending flange portions that each extend a partial distance around the cup member and away from the cup rim; and

d) a buttress mounted on the distal surface of the cup member, and that extends distally downwardly from the rim plane.

36. The acetabular cup prosthesis of claim **35** wherein the buttress is curved to follow the rim.

37. The acetabular cup prosthesis of claim **35** wherein the buttress extends about 105–115 degrees about the cup member along a curved path.

38. The acetabular cup prosthesis of claim **35** wherein each flange extends around the cup member a measure of between about 20 and 45 degrees.

39. The acetabular cup prosthesis of claim **35** wherein each flange has at least one opening therethrough.

40. The acetabular cup prosthesis of claim **35** wherein there are between one and three flanges.

41. The acetabular cup prosthesis of claim **36** wherein at least some of the flanges form an acute angle with the rim plane.

42. The acetabular cup prosthesis of claim **36** wherein at least some of the flanges form an angle with the rim plane of between about 15 and 45 degrees.

43. The acetabular cup prosthesis of claim **40** wherein two of the flanges are on opposite sides of the cup member.

44. The acetabular cup prosthesis of claim **40** wherein the flanges include at least an inferior flange and another flange generally opposite the inferior flange.

45. The acetabular cup prosthesis of claim **40** wherein the flanges include inferior, posterior, and superior flanges.

46. The acetabular cup prosthesis of claim **45** wherein the inferior flange is opposite the posterior and superior flanges.

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